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ABSTRACT

Although traditional learning theories are based on a demonstrative view of cognition, human beings tend to reason both demonstratively and dialectically. To examine the dialectical theory five studies were conducted. In the first study subjects rated words that could be used as personality descriptors for likability and subsequently learned them by paired association. Results showed that subjects learned their liked descriptors-words more readily than their disliked words. Subjects in the the antonym condition learned the opposites of their dislike words more readily than the opposites of their like words. In the second and third studies high school and college students rated nonsense syllables to one prime syllable by way of triassociation. Results showed that oppositionality had great heuristic power and that this facilitative role was in the dialectically framed conceptual abilities of the subjects. In the fourth study subjects learned words associated with personality characteristics, manipulated for oppositional/nonoppositional organizers. Results showed that words associated with oppositional organizers were easier to memorize. In the fifth study subjects rated personality traits for affective preferance and gave associaitons to the meanings of each word. Results showed that the impression formed by subjects based on the antonym were significantly different from the prime. These findings suggest that human meanings are not congeries of singular, unidirectional associations. (BL)

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RESEARCHING DIALECTICAL REASONING: POSSIBILITIES AND IMPOSSIBILITIES

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Researching Dialectical Reasoning: Possibilities and Impossibilities

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For some time now, I have been trying to prove that people are dialectically reasoning organisms, that they process meanings in cognition that take on dialectical relations and organizations. I would like to tell you about some of my research today. First, I would like to get two basic questions out of the way:

The first question is: What is "the" dialectic or "a" dialectical construct? I view dialectic as a certain form of human reasoning, or the product of this style of reasoning. Central to such reasoning is oppositionality. Indeed, I would define dialectical reasoning as "thinking in or by way of opposites." If something is not oppositional, in the sense that one side of a dual relation enters into the definition of the other at some point, then I have difficulty accepting the relation as a true dialectic. In a true dialectical relation one end always implies its opposite number. Thus, "left" is the dialectical opposite of "right." "Black" is not the dialectical opposite of "white," although one might use a black-white relation as a sort of analogy to the dialectical pairing of light-dark.

Aristotle (1952, p. 143) drew a distinction between demonstrative and dialectical reasoning that I find very useful. Both forms of reasoning begin with the affirmation of a premise--a "major" premise if you like. In demonstrative reasoning, the person takes the premise "as given," as if it were primary and true hence not open to contradiction, negation, or an alternative formulation. In dialectical reasoning, on the other hand, the premise is not primary and true but merely represents one or the other side of a duality, as in the case of having an opinion "pro or con" concerning what the premise

affirms.

Now, traditional learning theories and even modern information-processing theories of human behavior are all based on a view of cognition that is exclusively demonstrative. Stimulus "input" is always presumed to be a unipolar signal, an item or bit of information. A computer does not input either/or. A machine never negates, confronts, or alters its major premises--that is, the basic program that it enacts demonstratively or "mechanically" without a sense of the alternatives that might be "there" for the enacting. Human beings, on the other hand, reason both demonstratively--accepting their major premises as indisputable facts, revealed truths, or personal convictions--and dialectically. We human beings are either blessed or damned to see alternatives even when they do not exist--that is, we create alternatives by reasoning to the opposite of what "is" to what "is not" and then make the "is not" happen!

This creative capacity, which is just as often a destructive capacity, is why I find the study of dialectic so important. Dialectical reasoning permits me to say that people are not machines, that they are agents of their behavior (Rychlak, 1979; 1981a). This takes me to my second question: Can scientific method put a dialectical theory to test? One of the difficulties in doing research on dialectical reasoning is the fact that the experimental method is rooted in demonstrative logic. In doing a study we first stipulate a "primary and true" operational definition of that which we are investigating. We name "the" independent variable(s) and predict a unidirectional effect from it "to" the dependent variable(s). In order to meet the demands of falsification we must phrase out hypothesis in a univocal rather than an either/or fashion. Even our statistical tests of the outcome are based upon the demonstrative logic of mathematics. And, we name a fixed level of confidence based upon a metricized difference between specific, that is, singular mean values.

Unfortunately, a method of this sort can--and regularly does--prejudice the case in favor of a demonstrative theory of what supposedly takes place in an experiment. This is why stimulus-response and input-output theories are so popular in psychology. They mesh beautifully with the independent-variable--dependent-variable, unidirectional "flow" of events that we think we are tracing in our experiments. Dialectical reasoning is not unidirectional like this, and hence it cannot in principle be traced directly or predicted with certainty. The essence of dialectical reasoning is to be free of the "given" and potentially capable of taking flight to what is "not" given. Because of this difficulty in meshing dialectical theory with demonstrative scientific method, many dialectically-oriented psychologists reject traditional research in principle. Some go to historical analysis or concoct special brands of psychology termed "dialectical" (Buss, 1979; Gergen & Gergen, 1984). Others seek to devise new scientific methodology (Giorgi, 1970).

I have objected to these moves, believing that dialectic can and must be tackled in the traditional laboratory context (Rychlak, 1981a, Chp. XIII). Basic laboratory research is admittedly not as exciting as analyzing historical movements, or the clashes of social classes during some cultural epoch, but in the long run it is my belief that by admitting dialectical theories to our basic accounts of behavior we psychologists can make our profession considerably more dynamic, alive, and relevant. How, then, have I been tackling this question of researching dialectics in human behavior?

My strategy has been to approach the area by way of the key factor in all dialectical relations--that is: oppositionality! If we can show that oppositionality has significant conceptual-heuristic power, that it is employed in learning more like a framing "cause" of how material is encoded and retrieved than an "effect" of such coding and retrieval processes, then we will be a long way down the road toward a more accurate characterization

of human behavior. One of the first studies that I did on dialectical oppositionality had to do with affective assessment. My early studies on affection established that people will learn along either a positive or a negative line of preferential meaning, depending upon how they frame things to begin with. In a positive set of circumstances, people learn what they like about their ongoing experience more readily than what they dislike. However, in a set of circumstances that is considered negative by the person, his or her learning will be more readily colored by dislikes than by likes (Rychlak, 1981b).

In this early work on affection--a process that I hold is cognitive and not physical--I presumed that people could make judgments of preference (like/dislike) on literally anything that they premised in life. This made premising more a matter of "taking a position" on life--either pro or con, from situation to situation--than "responding to" the stimulus inputs of life. However, I never actually did a study to prove that people really do employ an oppositional evaluative approach in their differential learning styles across levels of affective materials. Recently, Richard Williams and I (Rychlak & Williams, 1984a) conducted a study in which we had subjects rate words that could be used as personality descriptors for likability. Three such descriptors would be the words active, realistic, and quiet. All subjects rated these words for affective preferences (likability) on two occasions. Reliably liked and disliked words were then identified for each subject in the study. We then made up paired-associates for each subject to learn.

One group of subjects was given the descriptor-word that they had seen and rated for likability. A second experimental group was given the antonym (i. e., opposite meaning) of the descriptors that they rated. In the antonym condition, subjects would have paired-associates made up of passive (for active), idealistic (for realistic), and loud (for quiet). If dialectical

oppositionality is active in cognition, then subjects learning antonyms to their liked words should do more poorly on these (presumably "disliked") words than when learning antonyms to their disliked words (which would be "liked"). Note that subjects in this antonym-condition did not even see the opposite word meanings in the experimental procedure. We were banking on meanings here and not specific words. As a control on the so-called demand characteristics of the words per se, we yoked a control group of subjects to those subjects in the antonym condition. The control subjects had therefore not made affective assessments of the original words, but they were learning exactly what the subjects in the antonym condition were learning.

As predicted, we found that the subjects who learned the descriptors that they had previously rated went along with our previous findings on affection. They learned their liked descriptor-words more readily than their disliked words. Also as predicted, subjects in the antonym condition learned the opposite of their disliked words more readily than the opposite of their liked words. Yet the control subjects, learning exactly the same list as those in the antonym condition, failed to reflect any difference in their rate of learning across the like/dislike lists of the antonym group.

It seemed clear that the subject's judgments of like-dislike did follow a dialectical organization in affective learning style. But was this oppositionality "in" the words or "in" the heuristic conceptualization of our dialectically reasoning subjects--as I was contending? In order to prove that dialectical organizations arise in the person's premisings rather than in the word stimuli per se, we had to design a study in which the conceptual power of oppositionality could be empirically compared to other, non-oppositional conceptualizations of learnable items.

To achieve this objective, Williams and I next designed a study in which subjects were asked to relate four different nonsense syllables to one prime syllable (Rychlak & Williams, 1984b). For example, to the prime of HIL a

a subject might be asked to learn: HIB is always LAT, HIB is never ZAC, HIB is sometimes YUN, and HIB is opposite to KIX. There is no oppositionality in the nonsense syllables, of course. They could not be the "cause" of any differences to be noted across these levels in favor of oppositionality. Incidentally, we rotated the various nonsense syllables across the four conceptual instructions so that the findings could not be explained based on presumed "easy-to-learn" syllables being inadvertantly used for the opposite condition. Thus, rate of learning in this study was once again our dependent variable. Our prediction was that oppositionality would be among the most effective of our four experimental instructions, certainly equal to the "always" instruction and significantly better than the "never" and "sometimes" instruction.

Two studies were done using this procedure--which we called "triassociation" instead of paired-association--one on a group of high school students and a second on a group of college students. In the high school sample, the "opposite" and "always" conditions were more facilitative of learning than the "sometimes" and "never" conditions; and in the college sample, the "opposite" condition was significantly more facilitative of learning than <u>all three</u> other conditions. We concluded that oppositionality had great heuristic power, and this facilitative role was not "in" the stimuli per se but "in" the dialectically framed conceptual abilities of our subjects.

The next study Al Bugaj and I conducted in an effort to prove that dialectical organizers in a memory task would facilitate learning when compared to non-dialectical organizers (Rychlak & Bugaj, 1984). In this study, subjects had to learn a list of names to which certain personality characteristics had been attributed. The personality characteristics discriminated among the names. One such list had oppositional organizers and the other had non-oppositional organizers. For example, in the opposite condition a subject was

asked to learn the following: "Charles is cautious, Douglas is bold, Phillip is bold, William is cautious," and so forth. In the non-opposite condition subjects had to learn "Charles is cautious, Douglas is quiet, Phillip is quiet, William is cautious," and so forth. "Cautious" and "bold" as potential organizational aids are dialectical opposites on the matter of being forward whereas "cautious" and "quiet" are not. The order of these names in a list was varied from trial to trial in order to counter serial learning effects. True to our prediction, subjects found it significantly easier to memorize the list that was organized around oppositional organizers than the list that was organized around non-oppositional organizers. Here again, dialectical organizations facilitate cognitive processing in short term memory.

As I noted earlier, modern cognitive theory is unable to account for dialectic in the sense of an implicit oppositionality in meaning. Doubtless, an artificially dialectical reasoning machine program might be written--carrying out the oppositional reasoning in demonstrative fashion. Of course, the machine would never oppose the program demonstratively directing it to ape dialectical reasoning and indulge in some <u>real</u> dialectical counter-programming of some sort. It could not do so <u>in principle</u>. Al Bugaj and I tried to highlight the weakness in modern associative network theory on this question of dialectical reasoning (see, e. g., Hayes-Roth, 1977; Wyer & Carlston, 1979) [Bugaj & Rychlak, 1984]. Using personality-trait words such as <u>talkative</u>, <u>cautious</u>, and <u>crude</u>, we asked subjects to rate these for affective preference and then subsequently, to "associate to" the meanings of these <u>primes</u>. In this manner, we were able to get three or four word-associates to each prime.

For example, in associating to the prime word "talkative," a subject might have produced "gabby" (which is a synonym of "talkative"), "quiet" (which is an antonym of "talkative"), and "trusting" (which is semantically unrelated to "talkative"). Knowing the actual associative ordering to the prime--whether

a first associate, a second associate, or a third associate--it was now possible to construct an impression-formation description of a "person" based upon the primes, synonyms, antonyms, and semantically unrelated words among our subjects--controlling for the associative strength of the words other than the prime. In short, we eliminated frequency/contiguity from consideration.

In associative network theory a so-called "node" is a concentration of meanings, welded together based upon the frequency of contact with the traits in question and then ordered for output in the present based strictly on such linear, demonstrative considerations. There is no possibility for a built-in oppositionality that a subject might employ in either-or fashion to frame impressions directly opposite to the essential meaning of the "node." We found that the impression formed by subjects on the basis of the prime ("talkative") was identical to the impression based upon the associated synonym ("gabby"), but the impression formed based on the antonym ("quiet") was significantly different from the prime. The semantically unrelated impression (based on "trusting") went in the direction of the prime and did not show the diametrically opposite impression formed from the antonym.

Now, what this means theoretically is that human nodes are not simply congeries of associations with a singular, unidirectional meaning. If a node has both a meaning and its opposite within the associational matrix, then when it is cognitively activated which of these alternative directions of meaning or "information" will be furthered? Associative network theory predicts a sequential direction of meaning flow based upon previous frequency considerations. Our data suggest that nodal complexes are not sequential or unidirectional in meaning flow, and that when activated cognitively the human reasoner may well take a course of behavior "in line" with the broader nodal meaning or in opposition to it. If frequency does not determine this course, what does? Possibly the determining factor is an affective assessment made by the

person concerning the direction that he or she wants to take vis a vis the general nodal meaning.

Time presses me now, and I would like briefly to point at one experimental design that Anne Sauer and I have been trying out this past year (Rychlak & Sauer, 1984). I call this research on dialectical implication. In a nutshell, we present subjects with little vignettes that say something about person A that implies something about person B. For example, a boss of both Scott and Lori might say "I am going to give this account to Scott. We need someone who is 'tough' to get it done." Based on such statements, a subject can then make inferences about Lori's possible tenderness. We find that subjects do indeed draw such inferences, and that although they may have less confidence in highly tentative dialectical implications they remember their oppositional insights as well as they remember the more direct messages that they get--as, Scott's supposed toughness.

We are pursuing this line of dialectical implication because I have this dream one day to design a study in which we will give subjects information "A" and then have them solve some problem or perform a task in which information "non-A" is called for. In other words, we will call upon people to use their "non-programs" in order to solve a problem. This is a difficult study to design, and I would be delighted if anyone present has any ideas along this line. I am also currently toying with some research in which we give machine language to human beings and then have them confront problems in which the language per se does help, and other problems in which only the opposite implication of the language will help. Studies along this line might even be given to computers to see if they could reason from the language to its opposite as human beings can. This would be an interesting "control condition" to employ. I feel that any way we can embarrass models of thought relying exclusively on demonstrative formulations will be helpful. That is, experiments of this sort would better approximate the role of the

programmer who writes the software and therefore can dialectically alter its directions at will--something the machine cannot do.

It is the programmer, the conceptualizer, the chooser and creator that I am "after" in my studies. I am convinced that he or she is reasoning in a way that the machine has no inkling of. We have a duty as psychologists to encompass the whole person in our theories of behavior. So, let us talk about dialectic today and theorize dialectically about whatever we wish to. But let us also realize that we must at some point submit our dialectical notions to empirical test. I am not afraid of the facts on this score. I only hope that more dynamically-oriented psychologists will begin the hard work of research to establish once and for all that human beings do reason by way of oppositional dualities. Thank you very much.

References

Aristotle. (1952). Topics. In R. M. Hutchins (Ed.), Great books of the western world (vol. 8). [pp. 143-223]. Chicago: Encyclopedia Britannica.

Bugaj, A. M., & Rychlak, J. F. (1984b). Dialectical versus demonstrative organization of information in an impression-formation task. Unpublished manuscript. Purdue University and Loyola University of Chicago.

Buss, A. R. (1979). A dialectical psychology. New York: Irvington Publishers.

Gergen, K. J., & Gergen, M. (Eds.), (1984). Historical social psychology. Hillsdale, NJ: Erlbaum.

Giorgi, A. (1970). Toward phenomenologically based research in psychology. Journal of Phenomenological Psychology, 1, 75-98.

Hayes-Roth, B. (1977). Evolution of cognitive structures and processes. Psychological Review, 84, 260-278.

Rychlak, J. F. (1979). Discovering free will and personal responsibility. New York: Oxford University Press.

Rychlak, J. F. (1981a). A philosophy of science for personality theory (2nd ed.). Malabar, FL: Robert E. Krieger.

Rychlak, J. F. (1981b). Logical learning theory: Propositions, corollaries, and research evidence. Journal of Personality and Social Psychology, 40, 731-749.

Rychlak, J. F., & Bugaj, A. M. (1984). Dialectical versus non-dialectical organizers in human learning. Unpublished manuscript. Loyola University of Chicago and Purdue University.

Rychlak, J. F., & Sauer, A. Dialectical implication in the drawing of inferences concerning other people. Unpublished manuscript. Loyola University of Chicago.

Rychlak, J. F., & Williams, R. N. (1984a). Affective assessment and dialectical oppositionality in the cognitive processing of social descriptors. Unpublished manuscript. Loyola University of Chicago and Brigham Young University.

Rychlak, J. F., & Williams, R. N. (1984b). Dialectical human reasoning: Theoretical justification and supporting evidence drawn from the method of triassociation. Unpublished manuscript. Loyola University of Chicago and Brigham Young University.

Hayes-Roth, B. (1977). Evolution of cognitive structures and processes. Psychological Review, 84, 260-278.

Wyer, R. S., & Carlston, D. E. (1979). Social cognition, inference, and attribution. Hillsdale, NJ: Erlbaum.